

CLAIMS

I claim:

1. A triangulated mobile gantry comprising:
 - (A) first, second, and third booms, each of which comprises a mobile base that is independently supported on the ground and a vertically extendible lift leg supported on said base and a having an upper end, said first boom being positioned laterally between
5 and longitudinally remote from said second and third booms; and
 - (B) a plurality of horizontal beams that functionally interconnect said lift legs.
2. The gantry as recited in claim 1, wherein said beams include first, second, and third beams functionally interconnecting said upper ends of said lift legs to form an at least essentially triangular shape when viewed in top plan.
3. The gantry as recited in claim 2, wherein said first and second beams are extendible to increase the spacing between said first and second booms and said first and third booms, respectively.
4. The gantry as recited in claim 3, wherein each of said first and second beams comprises a telescoping tube assembly comprising at least one inner tube and at least one outer tube slidable over the inner tube.
5. The gantry as recited in claim 4, where each of said first and second beams comprises a single inner tube positioned at least generally centrally of said beam, a first

outer tube extending from said inner tube to the lift leg of said first boom, and a second
outer tube extending from said inner tube to the lift leg of the associated one of said
5 second and third booms, each of said outer tubes being extendible and retractable relative
to said inner tube.

6. The gantry as recited in claim 5, wherein each of said first and second beams further comprises a pair of cylinders, each of which is operable to extend and retract one of said outer tubes relative to said inner tube.

7. The gantry as recited in claim 2, wherein said third beam is extendible to increase the spacing between said second and third booms.

8. The gantry as recited in claim 7, wherein said third beam comprises a hydraulic cylinder extending between said first and second beams.

9. The gantry as recited in claim 2, wherein each of said first and second beams has multiple mounting points in the vicinity of said second and third booms, respectively, for selectively receiving an associated end of said third beam at one of a plurality of discrete mounting locations.

10. The gantry as recited in claim 1, wherein said first boom comprises a front boom located adjacent a lateral centerline of said machine and said second and third booms are rear booms located on opposite sides of said lateral centerline.

11. The gantry as recited in claim 1, wherein each of said mobile bases comprises a wheel.

12. The gantry as recited in claim 1, wherein each of said bases is rotatable through an angle of 360 ° relative to the associated lift leg.

13. A triangulated mobile gantry comprising:

(A) first, second, and third booms, each of which comprises a mobile base and a vertically extendible lift leg supported on said base and a having an upper end, said mobile base being rotatable through an angle of at least 360 ° with respect to said lift leg

5 to steer said gantry, wherein

(1) said first boom is a front boom positioned at a lateral centerline of said gantry ;

(2) said second and third booms are rear booms positioned on opposite sides of said lateral centerline;

10 (B) first and second lift beams functionally interconnecting the lift legs of said first and second booms and said first and third booms, respectively; and

(C) a rear cross beam functionally interconnecting the lift legs said second and third booms to one another.

14. The gantry as recited in claim 13, wherein

said first and second lift beams are extendible to increase the spacing between said first and second booms and said first and third booms, respectively, wherein

5 each of said first and second lift beams comprises a single inner tube positioned at least generally centrally of said beam, a first outer tube extending from said inner tube to the lift leg of said first boom, and a second outer tube extending from said inner tube to the lift leg of the associated one of said second and third booms, each of said outer tubes being extendible and retractable relative
10 to said inner tube.

15. The gantry as recited in claim 14, wherein each of said first and second lift beams further comprises a pair of cylinders, each of which is operable to extend and retract one of said outer tubes relative to said inner tube.

16. The gantry as recited in claim 13, wherein said rear cross beam comprises a hydraulic cylinder extending between said first and second lift beams and operatively connectable to each of said first and second lift beams at multiple discrete mounting locations.

17. A method comprising;

(A) moving a mobile triangulated gantry over a load by straddling said load with an open front end of said gantry and positioning said load longitudinally between

said open front end a closed rear end, said rear end of said gantry comprising a first boom
5 positioned laterally between and longitudinally remote from second and third booms;

(B) coupling at least one of first, second, and third horizontal beams to said load, said first, second, and third horizontal beams functionally interconnecting said first, second, and third booms to one another; and

(C) vertically extending said first, second, and third booms to lift said load.

18. The method as recited in claim 17, further comprising extending said third beam prior to said moving step so as to increase the spacing between said second and third booms sufficiently to permit a rear end of said gantry to straddle said load.

19. The method as recited in claim 18, further comprising extending said first and second beams to increase the length of said gantry.

20. The method as recited in claim 17, wherein each of said booms includes a base and a lift leg mounted on said base, and further comprising steering said vehicle by rotating the base of at least one of said booms through an angle of at least 360 ° with
5 respect to the associated lift leg.